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ORIGINAL ARTICLE.

Extracts from an Opening Address at the Kansas City Medical College.

BY J. B. CONNELL, M.D.

Professor of Materia Medica and Therapeutics, K. C. M.

Once upon a time a man was sick with smallpox, and he wearily raised his head from his pillow and said: "Maria, if any more creditors call with their bills tell them that I am at last in a position to give them something!"

And so tonight, when called upon by Dr. Porter, I am able to give him something—perhaps not what he wants or expects, but what I happen to have.

I wish to institute a comparison between the three learned professions.

In looking over the pages of history it is curious and instructive to observe that all three professions had a very humble origin.

Take medicine: The first physicians were slaves, and when called to treat the king or royal family the condition was that if the case recovered the slave was to have his freedom, but if the case died, the slave's life was forfeited. Imagine the equanimity with which the first physicians entered upon a case.

Take the law: The first lawyers were pugilists—antique Fitzsimmonses and Corbetts, the difference being that they fought with clubs instead of fists. In ante-Feudal times when two citizens had a legal difficulty they referred it not to the courts, for there were none; but each chose a champion, and each champion chose a club and fought till the stars shone in the heavens. It was called "Wager of Battle." And if neither contestant yielded till the stars appeared it was a drawn suit, a hung jury, no decision, and the case had to be tried over again. But if one yielded, he cried "craven," and gave up the contest—and hence we have the phrase transmitted to us from Feudal times, "a craven coward."

Take the ministry: Its origin was also lowly. Hume tells us in his history of England before the Reformation that preachers or parsons were of the very lowest social status—something like ancient Salvation armyists, who exhorted from the street corners. And that so low was their social position that the word "parson" was applied as an epithet of opprobium and contempt, and they considered it a rare privilege if they were permitted to enter the kitchen and wed the maid servant.

When we contrast the lowly origin of the three professions with their present social position we cannot but feel that the prophecy of the Scriptures has been fulfilled: "But many that are first shall be last; and the last first."

In my judgment, of the three professions, medicine develops the best and greatest number of faculties.

Take the lawyer: He is fluent, ready, witty, logical, shrewd; a good business man, a diplomat, and often pugnacious, belligerent and offensive. He is versatile, and often acts a part, and varies his talents to suit the part.

Take the preacher: He becomes oratorical, literary, bigoted and (excuse me) often narrow from lack of attrition and rubbing up against his intellectual equals. He becomes an authority within his bailiwick and brooks no opposition to his settled opinions. He is nice to listen to on Sunday, but rather avoided on week days.

Take the physician: He must cultivate

hands, eye and ear, and nose, and all the faculties of sense. He must educate his powers of observation, the basis upon which must rest the highest reasoning power.

He is dextrous and often ambidextrous. He is adept and skillful in manipulation as the artist or musician. He cultivates his reason based upon the knowledge of material facts. He studies human nature from contact with the dweller in the vine-clad cottage and in the marble halls. He learns sympathy for human frailty—equanimity *in all things*.

And how about religious opinions? I hold that the opinions of every man, high or low, are largely the result of his environment—of his education, his mental caste, his occupation and experience.

Hence it is not strange that religious opinion in the professions should be so diverse.

Most preachers are theologians—they believe in a personal God. Why? Because they preach it. The pews demand it. All their studies are concentrated upon that conviction.

Most lawyers are agnostics. Why? Because from year in to year out they are dealing with human testimony. They find one man will swear one way, and another with equal powers of observation directly opposite. That one will perjure himself for a pittance, and another who knows will not "tell the truth, the whole truth, and nothing but the truth."

Recently a judge and jury in one of our highest courts, after examining scores of witnesses decided a man was dead—they saw him drowned—and soon after the man turns up and swears he wasn't dead at all.

So the lawyer learns that human testimony, however positive, is all unreliable, and naturally jumps to the conclusion that divine testimony, written by human pen, is also unreliable—and throwing himself back on the old Scotch verdict, "not proven," he sweeps all testimony from his mind and says with Ingersoll, "I am an agnostic; I don't know."

Most doctors are materialists. Why? Because they are constantly studying the body in health and disease. They dissect it, and study its histological texture as far as microscope will see. They see it disintegrated under the knife and under the forces of nature, and being accustomed to demonstrative evidence they say this is all of man—the end is here and now!

But as to the future, if there is one, the doctor trusts to nature of which he is an integral part, looking to his final end with serenity and composure—"looking through nature up to nature's God."

Auto-Intoxication.

BY G. B. SWEENY, M.D., PITTSBURG, PA.

Read before the Allegheny County Medical Society.

Auto-infection, intoxication and other terms, are applied to those conditions when the human organizm, to a greater or less degree, becomes poisoned by products which have been elaborated within the human economy.

That such infection does take place under certain circumstances, has been admitted by physicians from time immemorial; at the same time, the exceeding scarcity of literature bearing upon this subject suggests only too strongly how little of definite knowledge has been gained. What information has been gained, has been obtained under circumstances which render it very difficult to demonstrate beyond a doubt many phenomena which we believe are due to auto-infection, and which we are daily combating successfully by administering remedies which clinical experience proves are antagonistic to the morbid elements at work in the system.

The chemical changes which are constantly taking place within the body in both physiological and pathological conditions, and which cannot be satisfactorily studied in detail outside the organism, compel us to admit that, after all, nature works largely behind closed doors, and must form at least a part of our apology for failing to satisfactorily answer some questions which naturally

would suggest themselves in considering this subject, and which, in the light of rapid advancement in other lines would seem to demand solution.

Our work in this field of investigation must be done largely in an inductive manner. Taking phenomena we must discover and identify causes.

Incidentally permit me to say that the crowning glory of the nineteenth century, from a medical standpoint, is a disposition to study the origin of disease.

A new and beneficent era of progress in the science of medicine must be ushered in through the untiring and zealous efforts of an army of earnest workers who are identifying processes, physiological and pathological, and discovering the places where they diverge, and pointing out the causes of disease.

Going immediately to the question of the causes of disease we recognize four primary pathogenic processes. The first of these, elementary dystrophies, while arising from vital activity of cells when acted upon by some external causes, physical, mechanical or chemical, is especially difficult to study, as the simple process is usually complicated by effects of a local character.

The second of these causes, nerve reaction, is also difficult to assign to its proper place in the production of disease. We may well pause and consider whether we have accorded to the reflexes more or less pathogenic influences than they actually exert. Certain it is that they usually play a secondary role in the subjects previously reduced by other influences.

The two other pathogenic processes are disturbances interfering with nutrition and infection.

Bearing directly upon the first of these is the question of diathesis, which has been aptly defined as a permanent disturbance of nutrition, which prepares, provokes, and maintains different diseases as seen in their location, their evolution, and pathological processes.

Infection is the last of the four pathological processes. Traces of this nature are found far back in the history of medicine, but it has remained for these latter days, after witnessing discoveries brilliant and dazzling, although not always absolutely accurate, to demonstrate that in the body of an individual attacked by a contagious disease there exist lower vegetable organisms, capable of implanting themselves and multiplying in the tissues of a healthy man, and of causing in him a disease similar to the original.

To speak of the specific microbe instead of virus, or of contagion, is not to supplant one idea by another; it is to advance from the vague and indefinite to the definite and rational.

This inquiry naturally presents itself to our minds: What makes possible the development of disease? It is not the chance meeting of man and microbe. This meeting is constant, generally unattended by results. Infectious disease is only an accident because the infectious agent finds only exceptional circumstances favorable, not to its penetration, but to its development and multiplication. In health man is not attractive to the microbe, but when his vitality is weakened then his means of defense is diminished.

The chemical constitution is modified by disordered nutrition and invites the invasion of the microbe. Persons fatigued by overwork, exposed to depressing influences, are struck by conditions real and disease developing, from insignificant nerve excitations which would have produced nothing in perfectly healthy men.

The reaction of a disturbed nervous system induces temporary disturbances of nutrition. This in its turn opens the way to infection always at hand, to germs always present, which certainly have to fulfill in nature another part but which, destined to destroy dead matter, are also capable of destroying living matter when they find it in a state of preparation. Here lies, perhaps, the history of angina, rheumatism, and pneumonia. When the physician shall be in possession of this double knowledge that many diseases are produced by the microbes and that these can act only by a deterioration of the health, resulting from various

pathogenic processes, he will recognize that the new discoveries contain nothing subversive, and that the lesson taught by ancient medical observations are not compromised. He will know that whilst seeking the means of combatting microbes he ought, and he will always be obliged, to sustain the forces of the organism and make good its defense, inspiring himself constantly with this truth: Before every illness there is a disturbance in life—for nutrition in life. Perverted nutrition leads up to the development of new substances which may become toxic.

We find in the organism peptones, which do not originate in the intestinal tubes, but which are injurious in this sense, that, being dialysable, they escape by the urine, and thus bring about abnormal spoliation of the organism. Herein is intoxication.

But infectious agents can produce something injurious, can elaborate substances that are toxic. We find a great many bodies produced by the life of the microbe. They form soluble ferments which produce local lesions by breaking up living cells. It is certain that intoxication arises in part from the harmful action of microbes which, seeking a vulnerable point in the economy, proceed to a deleterious work.

As is well known the kidneys and the alimentary tract are the highways in which these morbid processes usually have their origin.

To elaborate upon the different ways in which these processes manifest themselves is beyond the range of this paper, as I have only hoped to introduce this very important subject, which I am sure must be one of deep interest to this intelligent body.

Uric Acid and its Solvents.

The Times and Register.

Mendelsohn (*Deut. med. Woch.*) discusses the solubility of uric acid in gouty deposits and in concretions.

The solubility depends on—

1. The amount to be dissolved.
2. The reaction of the medium.
3. The presence of other bodies.

This last point has hitherto received but little attention. Non-poisonous bodies capable of dissolving uric acid in the retort are also expected to dissolve it in the body, whether in the blood or of the urine. The author has shown that even in the reagent glass these bodies lose their solvent action when urine is present.

Uricedin does not dissolve uric acid, and yet it gives to urine uric acid dissolving properties. Lysidin is an extraordinary solvent for uric acid, but it loses these properties if urine is present. Thus bodies exist in the urine which by their presence alone annul the dissolving powers of lysidin, etc. It would appear that the extensive use of these agents is not only useless but may even be harmful. The author has searched for the bodies which hinder this solvent action. Neither the urinary pigment nor urea has any such action. The earthy phosphates were precipitated and filtered off. The clear fluid was then evaporated to dryness, and the residue ignited.

Then it was found that the residue when dissolved had the same hindering action on the solvent powers of lysidin, etc., as the urine itself. The most important among these bodies in the residue sodic chloride. A few granules of common salt exercise a similar hindering action. Lysidin and piperazin when not chemically pure have far less solvent action on uric acid, and impure uric acid is also much less easily dissolved. If lysidin or piperazin be added to blood serum, the resulting fluid dissolves uric acid nearly as an aqueous solution of these agents. If saline solution or even a granule of common salt is added, the solvent action is lost. In the blood the salts amount to only 0.85 per cent., whereas 16 to 17 g. of sodic chloride is excreted daily. Hence the difference between blood and urine. Thus uric acid is dissolved in the urine in a complicated and as yet ill-understood fashion. Certain mineral waters have the power of dissolving out uric acid within the urinary apparatus or in the urine, but the mode of action is not understood. The important point is not to study the properties of uric acid apart from its surroundings; the characters of the media in which the uric acid is dissolved must be investigated.

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Topeka, Kansas, Saturday, Sept. 28, 1895.

City Sanitation.

The extent of the responsibility of a city government in securing sanitation cannot certainly be limited to the provision of the means for the disposal of sewage. Nor can the responsibility for the failure of proper sanitary measures be shifted upon the shoulders of one officer. It is the duty of the city government to provide the means. The sanitary officer may enforce regulations, but he cannot certainly be expected to enforce regulations which have not been provided for nor conduct public improvements for which he has no funds.

If an epidemic occurs the lack of proper sanitary regulations are never considered in the censure crowded upon the officer upon whom is thrown the responsibility. He may enforce strict quarantine regulations, he may close the schools and all public places, but he has no authority to compel Mr. Croesus to connect his closet with the sewer. He has no authority to prevent the county from maintaining a nuisance in the rear of their building. He cannot provide means for removing the garbage from the alleys and back-yards, yet he is held responsible for the spread of disease. The epidemic comes, he is ordered to stop it and censured if he fails to do so at once. The present small epidemic of diphtheria in Topeka has caused a wonderful amount of talk and a great deal of unnecessary criticism of a most excellent physician. The health officers are, so far as we have been able to learn, enforcing a strict quarantine, but there are some features about this epidemic for which the health officer is not in the least to blame. Many of the cases are very indefinite. Many cases of sore throat appear which though they are apparently infectious do not present the characteristics of diphtheria. Many of these cases are not reported and are not quarantined, and on the other hand many suspicious cases of sore throat are reported which later developments prove were deceptive. In spite of the fact that strict quarantine has been enforced in every suspected case, new cases develop in different localities, and no blame can be attached to the health officer on that account. If a better sanitary condition of our public schools and other public buildings was enforced, and if every well in the city was filled up, and every outdoor closet without proper sewer connection abolished, and the city scavenger force compelled to do something beside carry away dead animals: in other words, if the city would take upon itself more of the metropolitan manners and importance, the city health officer would have less to be responsible for. From a sanitary aspect the city of Topeka is inferior to a good many Kansas villages.

WE have a Yale Chair in first class condition, for sale.

The Kansas Medical College to Be Commended.

The sixth session of the Kansas Medical College begun Tuesday the 17th inst. A social was held in the college building for the students, faculty and friends of the institution in the evening, which was well attended and enjoyed by everybody. Refreshments were served, and also music vocal and instrumental by Miss Lamont and Miss Lindsber, of Topeka.

The school has had a remarkable growth when it is remembered that the three-year course was established in the beginning and has been studiously and persistently continued up to the present year. From now on the four-year course will be enforced. When the school was organized in 1889 there were but few medical schools but what would graduate a student in eighteen months from the time he began the study, and two terms of from four to six months schooling was often all that was required. The Kansas Medical College was established on a higher plane, and its projectors feel that while its ideal has not been reached that its efforts and influence have been on the side of higher medical education. As expressed by the faculty and board of trustees when the four-year course was adopted "that they would rather close the school than not live up to the requirements of the age."

The profession at large is seconding the efforts of the school by patronizing it in recommending it to their students. The enrollment will equal that of last year although the four-year course has driven some students away, and the Pharmacy Department which matriculated eighteen students has been abolished. There were forty-seven students enrolled in the Medical Department last year and eighteen in the Department of Pharmacy. Taking it all in all the outlook for the college is very encouraging and it shows clearly the progressive spirit of the Kansas physicians in encouraging a higher and better medical education.

Observations.

Our grandmothers had a system of medication which, though it was not of scientific construction, was based upon a good deal of common sense and observation. Physicians are now called upon to treat a great many ailments which were formerly managed successfully by our grandmothers, and in many stances with results equally as good if not better than those that attend our own attempts at scientific treatment. What plan of treatment for a cold can we suggest that will excell or even equal in efficiency or rapidity the hot drinks, the foot soaking or the wet packs of our grandmothers? Necessity compelled them to care for their own. They studied life in a simple, natural way, and they observed the mysterious forces of nature. Ignorant of pathology and the causes of disease their practice was in every sense empirical. But they knew from observation and experience how to stimulate the spark of life and start the blood current pulsating through its stagnant vessels with renewed energy and vitality. They knew how to utilize the forces of nature in resisting disease and restoring health. We may laugh at their crude ideas, but we must respect their opinions and look with awe upon the results they attained.

There are few roles without variations and there are few diseases that correspond in every particular to the descriptions we are taught in college and read in our textbooks. We learn to recognize by conditions as a whole. We may classify by pathognomic signs, but it is the student of natural and physiological laws whose conception of the true condition leads to successful treatment. He who has no mind of his own, who has not learned to think for himself, he alone can practice medicine by rote. As there is no absolute invariable rule for the progress of disease there can be no set plan for the treatment of disease. The remedy which has cured nine cases of gonorrhœa for Dr. B. may fail on the first one for Dr. C., because the conditions may be entirely

different, and the same result may follow the treatment of the tenth case by Dr. B. Our conclusions are often drawn too hastily and our statement of results is often too barren of facts surrounding the cases to be of real merit.

The confidence with which some people discuss the most weighty medical subjects is sometimes amusing, but the conscious pride with which they assert that they "know all about it for they studied medicine a little once," provokes our sympathy.

If the people would stick to their simple remedies, their baths, etc., and quit trying to dabble with things they do not and cannot understand, there would be fewer mistakes, and though there would probably be no better doctors there would be fewer poor ones. The idea that the people must be educated up to our scientific theories is responsible for much of the prejudice and the meddlesome interest awakened in every case of importance.

Newspapers readily respond to the popular demands and publish long dissertations on the most recent bacteriological investigations, glowing accounts of the wonderful cures by antitoxines, and not satisfied with their own opinions on these matters, they must have medical correspondents to inform the people of every move that is of interest in the medical world. The people no longer have confidence in the ability and integrity of their family physician, but they put their faith in the drug he uses. This one must have Dr. Tox for his child's sore throat because he uses antitoxin, and this one must have Dr. Lax because he prefers Lœffler's solution. Only a few days ago we heard a very serious discussion between two laymen on the merits of antitoxin. The child of one of them had a sore throat, and though his physician had found no reason to pronounce it diphtheria he had more confidence in the opinions of his friends upon the character of the disease and its proper management than in his physician. At this day and age it would seem that men would prefer to die rather than not to have the most popular remedy. and the doctor who keeps in the swim must read newspapers as well as medical journals, and always have a supply of popular remedies on hand.

We have no intention or desire to decry the use of antitoxin for there are too many proofs of its usefulness, too many statistics showing the most positive results for us to doubt its value and efficiency. It is true that we can say of no particular case that it would have died without antitoxin for many bad cases have recovered without it, and many other cases have died with it; but taking them as a whole we find that the death rate where it has been used has been greatly diminished. Some of the results reported have been magical. There have also been some mishaps. In some cases reported the membrane disappeared, voice became clear, and the patient was considered convalescent, when on the tenth or twelfth day they became suddenly comatose and died.

Antitoxin seems to have little or no effect upon mixed infections or complications. The best results from it have followed its early use. If we wait until the toxins have already exerted their deleterious influence upon the nervous system and organs, the neutralization of the toxin will not repair the damage. The conclusions drawn from the most careful observation are that it exerts a marked favorable influence upon the local lesions, it lessens the depression and lowers the temperature. The percentage of albuminuria is slightly larger in the cases where antitoxin is used, but the percentage of anuria is somewhat smaller. Erythematous eruptions sometimee appear from its use, but they are temporary and leave no serious results.

Wanted

A physician with $200 cash to purchase stock of drugs at less than invoice. Can secure a fine location within 40 miles of Topeka. No opposition. Address Lock Box 16, Louisville, Kansas.

Infectious Sore Throat.

How are we to decide the oft repeated question, "Is there such a thing as pseudo-diphtheria, or are there other forms of infectious sore throat? If we base our diagnosis of diphtheria upon the presence of the pathognomic bacilli, then we must find some means for readily distinguishing between the true and the pseudo-diphtheria bacilli. Lœffler in his earliest investigations recognized the existence of two varieties of bacilli, which differed only in the fact that one was virulent and the other was not. Other investigators have found the pseudo-bacilli in the throats or healthy individuals without producing any disturbance in the individual or giving rise to a single case of infection.

Dr. Morris Bunce reports a number of cases of tonsillitis, occurring during a small epidemic of diphtheria, in which many of the symptoms of diphtheria were present, though there was no membrane nor albuminuria. In every case the Klebs-Lœffler bacillus was found to be present. He naturally suggested the query whether these shall be considered mild cases of diphtheria or from their mild character, the absence of the most prominent symptoms, and short duration, they should be considered an infectious disease *sui generis*.

It seems to us that if we accept the existence of a pseudo, non-virulent bacillus, and if we are to give credence to the statements of those who claim to have found the Klebs-Lœffler bacillus in healthy throats and in the throats of convalescents from diphtheria several weeks after recovery with no resulting case of infection, then we must conclude that the presence of this bacillus is not alone diagnostic of diphtheria. As an additional argument we may cite the case of Escherich, who reports that a child whose two sisters had been sick with diphtheria was taken with sore throat with a grayish-yellow deposit upon the tonsil. Numerous non-virulent bacilli were found, but no true bacilli. Here is a case in which all the characteristic symptoms of diphtheria were present but not the bacilli.

The tendency and the teaching of today is, however, that the most absolute certainty of diagnosis can be based upon the presence or absence of the bacilli. Such being the case we must recognize another form of infectious disease of the throat other than diphtheria, namely, those inflammations characterized by many of the same symptoms though lacking the pathognomic bacilli.

On the other hand, if we make the presence of the most prominent symptom of diphtheria our guide in diagnosis, namely, the membrane or exudate, then we must still recognize another form of infectious sore throat. Upon these conditions we must recognize those cases in which the general symptoms are those of a mild diphtheria, the disease being less virulent of shorter duration and much less fatal, and in which no exudate or membrane appears, as belonging to a distinct and separate disease, though the bacillus may be present.

If we draw the line upon the finding of a pathognomic bacillus then there will be set aside a class of diseases of such protean character that there can be no possible diagnosis except through bacteriological examination. There is a characteristic lesion in diphtheria by which we may estimate the gravity of the case, that is the formation of a necrotic or diphtheritic membrane. If we draw the line upon the finding of this lesion we will then have on the one side all those cases presenting all of the symptoms of diphtheria, its virulence, its complications and fatality; on the other side, we will have all those cases which though they may present the depression and the pyrexia they are lacking in the essential characteristic lesion. They are less virulent, seldom fatal, and are seldom complicated.

WANTED.—A set of Reference Hand Book. Any one having a set and wishing to dispose of it, address this office.

New Drugs.

Every week brings forth some new derivative or new combination in the line of drugs. Our text-books do not keep pace with the pharmacists. If the physician of to-day attempts to study therapeusis he no longer goes to his library shelves, but he searches the advertising pages of his journal, he hunts up all the pamphlet literature furnished him by the pharmaceutical firms. The advertising pages of the medical journals are becoming the weekly revised text-books of medicine. The firms who have most zealously catered to the wants of the profession are always willing to supply us with all the literature extant upon the properties of the drugs they handle. Look over the advertising pages of the JOURNAL carefully and if you see a drug mentioned with which you are not familiar write to the manufacturers for information. You will be wiser and your patients will be benefited. If you go into the office of a progressive physician you will find that he most carefully preserves the descriptive pamphlets which are sent him, and we have known these pamphlets to be bound up for convenience and ready reference. A collection of this kind is an important addition to your library for it furnishes a source of information which cannot be purchased.

WE are pleased to note that the case in which Dr. L. L. Aimes was arrested for practicing dentistry without a license has been decided for the defendant. Dr. Aimes, who had previously practiced dentistry, put in an amalgam filling for a patient in preference to extracting a tooth For this offense he was arrested by a local dentist.

DRUGS which are praised too strongly often fail to attract the attention desired, but it is never considered exaggeration to state facts. We have given our personal attention to several preparations now on the market and can speak with some definiteness as to results. One of the preparations which we have tried faithfully is Guaiacoline prepared by the Kaw Pharmacal Co., of Topeka, Kas. We have prescribed this preparation in a large number of cases during the past two years, and our records show that our patients have been benefited in every instance. In several cases of incipient phthisis we have had the pleasure of seeing complete relief of all the symptoms. As to the permanency of these results we are of course at this time unable to say, but there is apparently a complete cure. In those cases of phthisis where we have prescribed it we have noticed diminished amount of expectoration, relief of sleep sweats, increase of strength and weight. In every case the cough has been improved, and in some cases has entirely disappeared. It is not always palatable at first, but after a few doses the patient finds no difficulty in taking it, and it is digested without fermentation or other disturbance. In several cases we have found digestion very much improved by its use.

Treatment of Cancer from a Chemical Standpoint.

Cancer specialists have been much condemned by the medical profession in general for years—seemingly through prejudice. A prejudice based upon the idea of a "paste," the composition of which is unknown. The condemning of a substance or compound of which we know very little or nothing, is not scientific. Nor have the medical profession any right to treat this subject in this manner unless they can positively prove that they have a remedy for cancer which is superior to the paste or caustic. The knife has done much good, yet it is very uncertain; as in many instances it is next to impossible to tell when all the cancerous tissue is removed, and second is the danger of re-infecting the wound. Thus, cancers frequently recur in the same place or locality.

While, on the other hand, there is no possible chance of reinfection when removed by pastes, as the cancer cells and substance undergo a chemical change. We are prone to be prejudiced about things we do not understand, or have not thoroughly investigated. This spirit should be discouraged unless we can offer something better.

I think you will agree with me that all cancers of whatever nature are primarily of embryonal structure and origin, and seldom evolve to the higher cell structures; and further, the embryonal tissues are not as strong to resist chemical action as the more highly developed ones.

This being a fact generally admitted, I cannot see why we should condemn the idea of "eating out." Perhaps it is because our text-books forget to mention such a thing as being possible. In the the process of "life," a very peculiar thing, we have an interesting fact, namely, all albuminoid substances are digested and as imilated; now what do we mean by this digestion but a change in the chemical structure of albuminoids, or, in other words, it is a liquifaction of albumins—sometimes termed peptones and parapeptones. The fact to be thought of is that cancers being embryonal in structure and origin are in reality albumins or of that nature, and would seemingly follow out similar laws of chemical reactions and changes as do other albumins. If we place this embryonal tissue in a normal stomach with normal secretions it would be digested, or changed into peptones, parapeptones, etc. (liquid albumins). But why cannot we produce this change outside of a stomach as we do with other albuminous substances? I stated normal stomach and secretions because the question comes up, why, if this is a fact, cancers of the stomach exist? A stomach that has cancer is not normal, principally in its secretions—saying nothing of the other things which must be considered—and hence could not prevent a cancer growing.

I admit we have various albumins in the body. But then there is some chemical or ferment that will liquify any of them; and, further, the cancerous albuminoid is generally accepted as being the one of least resistance. Then, why is it not possible to remove the weaker albumin without injury to the stronger or normal albuminoidal tissue of the body by a paste or other compound of chemicals. I see no reason why it cannot be done unless there is a lack of energy to investigate carefully the things which are already known to bear directly toward its solution.

QUI PENSE.

The Process of Repair.

British Medical Association, reported in the MEDICAL RECORD.

Dr. Samuel Wilks, chairman of the section, took this as the subject of the annual address. All about us, he said, change is ever going on; and not only in the world around us, but also in the entire universe, as far as we can learn by the evidence furnished by the telescope and the spectroscope, this same endless succession of growth and decay goes on. Just as the body grows and decays, as a whole, so do its several parts. We may see the two processes of production and destruction going on in the tissues whenever these are subjected to any special stimulus, such as injury or other morbid influence. In speaking of any unnatural condition in the body, we commonly employ the term "morbid," but this is not strictly correct, for only a portion of what is found is really pathological, the rest being the result of a true physiological process. When employing the terms "morbid" or "disease," we do not recognize, as we should, the reparative process that goes hand in hand with the destructive one. With regard to injuries, we seldom have any difficulty in recognizing this reparative action, and in many cases of internal disease also we can readily distinguish the physiological from the pathological. In valvular heart disease, for example, we know that the hypertrophied cavities are the manifestation of a conservative process; and in like manner, hypertrophy of other hollow viscera is the attempt of nature to overcome obstruction,

and is truly conservative, and not pathological. There are, however, other more complex states, in which it is difficult to distinguish clearly between pathological and physiological changes. It is possible that the two processes are more intimately associated than we have hitherto believed, and that a mutual relation of a chemical or electrical nature may exist between them. Thus it has been shown that if one electrode is placed upon an ulcer, the latter will heal rapidly, while a sore is being produced at the point of application of the other electrode. The two processes are also seen going on before the eye in almost any ulcer, for along with the destruction we see, during the process of granulation and secretion, that new material is being formed. One reason why this double process is so often overlooked is, doubtless, owing to the fact that the reparative material is not equal in organization and similar in structure to the original tissue which it replaces. The complex parenchymatous structures are not renewed after injury, as are the simpler ones of bone or connective tissue; we do, however, occasionally see true regeneration of glandular or nerve tissue. Still this is true repair, even if imperfect and partial, and we have been wrong in calling the process morbid, instead of reparative. This distinction is a useful one in the matter of prognosis and treatment, as well as of a purely pathological interest. The speaker illustrated his meaning by several examples. As regards phthisis, he said, nothing was more common than an error in prognosis, and this simply because there has been a confusion in the mind of the profession between the constructive and destructive changes present in the lungs. In fact, the very signs which are the strongest evidence of a beginning reparative process are regarded by many as the unmistakable signs of disease. He recognizes the existence of a cavity, and at once condemns his patient, forgetting that the physical signs, dull, tympanitic note, pectoriloquy sinking in of the chest walls, and absence of vibration all point to the presence of a cavity with hard walls, the result of a reparative action following the destructive process. The destroyed portion has been walled off from the healthy part of the lung by this fibrous barrier which the examiner has looked upon as a sign of disease rather than of a protection against further spread of the disease. Unfortunately, it is not alone the tyro who make this deplorable mistake, for the speaker had often had occasion to note the surprise of old practitioners on seeing their former phthisical patients alive after they had condemned them to speedy death.

This case of phthisis is, perhaps, the commonest example, where the constructive and destructive processes have not been sufficiently distinguished; but the same may be seen in cirrhosis of the liver. This organ may be observed during life to be first enlarged and then become nodulated and shrunken; among other signs of the disease which the text-books describe is an enlargement of the veins on the surface of the abdomen. These were thought at one time to be due to some pressure on the vena cava, but this is really not the case, and the appearance is now shown to be due to an enlargement of the epigastric vein in connection with the opening up of the old umbilical vein, which often becomes as large as a goose quill. Through this the portal blood flows and finds a free passage into the vena cava and systemic circulation. The patient in this way is relieved from an engorgement of the portal system and from the consequent dropsy. This enlargement of the veins is, therefore, a sign of a reparative character. And probably this is not all, for when the cirrhotic organ is examined carefully and microscopically we find that, although the nodules are composed mainly of atrophied hepatic tissue, there has also been an attempt to replace it by a new formation of cells and vessels. New blood vessels may be seen and apparently new ducts, as well as cell growth. Now, although these new elements are not perfect enough to take on the function of the liver, there can be little doubt that they do relieve the circulation in a disabled organ.

There are other cases in which the two processes of construction and destruction

are even more closely interwoven, so that it is often impossible to distinguish between them and to assign the right place to each. We should study these with greater care and more intelligently, for the discovery of the several influences exerted in the production of each is a matter of great practical importance. A consideration of them also shows that pathology is governed by the same laws as those which exist elsewhere throughout the realm of nature, and it therefore must take its place on an equivalent footing with the other sciences.

The Neurotic Element in Pulmonary Consumption.

Thomas J. Mays, in Lancet, 1895, I. 1360.

Many observers have advocated that consumption is attributable to a disordered nervous system. The author lays down the proposition that any agent which interferes with the respiratory nerves in particular, or with the nervous system in general, has the power to produce pulmonary phthisis and other lung troubles. He has found over 100 cases of phthisis in literature, where either the pneumogastric nerves or the respiratory centers were in a pathological state due to injury or syphilis, alcoholism, diphtheria, measles, diabetes, multiple neuritis, locomotor ataxia, bulbar paralysis, tumor of the pons, etc. Phthisis follows many nerve poisons.

Kussmaul's investigations show that a majority of workers in mercury, who have mercurial intoxication, also contract phthisis. The children of those engaged in mercury manufacture are exceedingly apt to have scrofula, rickets, and pulmonary phthisis. An instance is given of a worker in mercury, whose three wives, also working in mercury, died of phthisis. Five of his children also became phthisical. The children born before the mother began working in mercury, were well. Lead deteriorates the nervous system, and provokes pulmonary phthisis. According to statistics the disease is from two to three times more prevalent among lead workers in Wales than among the farmers in the same locality, or among the general population of England and Wales.

The abuse of alcohol is one of the most potent agents in the production of phthisis. This agent produces a poisonous influence on the peripheral nerves. A parenchymatous degeneration with more or less interstitial neuritis can often be noticed on close observation.

Syphilis, the virus of which is another nerve poison, is often the unsuspected cause of pulmonary disease; we find in this a proliferation of the interstitial connective tissue, peri-bronchial induration, thickening of the lobular parenchyma, broncho-pneumonia, etc.

A specific spasmodic affection of the nerves is seen in pertussis. The pulmonary changes in pertussis are interesting, because they show a direct relation between the disease of the nerve and the organ it supplies. In severe cases of pertussis there are congestion of the pharyngeal, laryngeal, and bronchial mucous membrane and of the lungs, together with dyspnea and feeble respiratory sounds. Epistaxis, hemoptysia, emphysema, chronic bronchitis, broncho-pneumonia, and phthisis are frequent complications.

Influenza is especially a disease of the nervous system. Walshe says the disease seems to exert a special influence on the pneumogastric nerve.

Cerebro-spinal meningitis is nearly always associated with pulmonary disorder. Other diseases in which the nervous system and the lungs are affected, are beri-beri, pellagra, diabetes, and leprosy.

In epilepsy the medulla oblongata is involved, and in this area must be sought the long recognized association between epilepsy and pulmonary disease. Echeverria states: "I have most closely investigated the relation of pulmonary tuberculosis and epilepsy, and undoubtedly the genesis of tubercles in the lungs is favored by the lesion in the medulla oblongata proper to epilepsy. I have traced the pulmonary trouble from its inception, and feel convinced that the

association is more than a casual coincidence of both morbid conditions."

Asthma is a spasmodic affection of the pneumogastric nerve. There is not much clinical evidence to support the belief that asthmatics are long-lived. Despite the fact that asthma and lung phthisis are supposed to be antagonistic, Fuller states that many asthmatics die of phthisis. Williams shows that in 385 cases of phthisis, seven began with asthma.

The respiratory organs are implicated in hyteria, as seen in dyspnea, aphonia, laryngeal, paralysis, etc., and this has a tendency to cause lung disease, either in the individual or in the offspring. Among the grandparents, uncles, aunts, brothers, and sisters of 44 hysterical patients, there were 60 who had phthisis. In 2,380 idiots and imbeciles, 28.31 per cent. were phthisical. Among the last 100 post-mortems on idiots, at Earlswood asylum, 62 were found to have had phthisis. "Defective innervation, in all probability, led to malnutrition and predisposed to tuberculous condition." In a history of 100 families, recorded by Dr. I. U. Kerlin, in each of which there was a case of idiocy, there were, among the grandparents, parents, brothers, and sisters, 145 cases of phthisis. Among the hereditary causes of idiocy and imbecility, phthisis ranks the highest, with a per cent. of 28.31, while insanity, epilepsy, and alcoholism have a percentage respectively of 16.47, 8.69, and 16.38. Dr. Langdon-Down says: "It appears to me that tuberculosis must be accepted as one important cause of idiocy; that it impresses special characters thereon, while imparting a strong family likeness to the subjects of this class." It is no less clear that idiocy of a non-tuberculosis origin leads to tuberculosis. Whether through the influence of the pneumogastric, malassimilation of food or defective innervation, the connection between the two is more than accidental. Many writers have noticed the clinical association between pulmonary disease and insanity. It is said that the death rate from phthisis among the insane is four times greater than among the general population.

The Parasite of Malaria.

Lancet.

This was the subject of the last Hunterian oration, delivered by Dr. P. Manson, who has had a large experience of tropical diseases in China. Malaria is in the aggregate more destructive than tubercle, and claims six times as many victims as cholera. The specific organism of the disease was discovered by Laveran about 14 years ago. It is polymorphic, occurring in the blood in very numerous and varied forms, most, if not all, of which may be classified under certain leading types:

1. Free spores and free sporulating bodies, often having the outline of a diverging rosette.
2. Small, unpigmented spi, and intra-corpuscular bodies.
3. Large, pigmented intra-corpuscular bodies.
4. Intra-corpuscular rosette bodies.
5. Crescentric bodies.
6. Various forms derived from those already mentioned.
7. Flagellated bodies and free flagella.
8. Bodies which are probably degenerate stages of those already enumerated.
9. Pigmented leucocytes.

These are phagocytes which have ingested the particles of pigment set free when the rosette body falls to pieces, and this process of pigment inclusion can often be witnessed. All these various bodies are but different stages in the life of a sporozoon. The best explanation of their mutual relationship is that supplied by Golgi, who considers that the free spores are the first stage, and that they, invading the red corpuscles and nourishing themselves on the hæmoglobin, grow into the larger pigmented intra-corpuscular forms. After a time these segment and become the rosette bodies, which presently fall to pieces and liberate spores, to start a new generation. The flagellate bodies originate either—

1. From certain of the large intra-corpuscular pigmented bodies, which, having es-

caped from the corpuscles, after a time throw out flagella; or

2. From the crescentic bodies, which can be often seen under the microscope to change into oval and spherical bodies, and finally to throw out flagella.

There are believed to be at least two leading types of the malaria organism, the benign and the malignant, differing both in their figure and in their pathological effects. The former never give rise to the fatal pernicious fevers, but only to the mild tertians, quartans and double tertians, called quotidians; found both in temperate and in warm climates. It appears in the peripheral circulation in all its stages of small intra-corpuscular amœboid body, large pigmented form, rosette and flagellated body. The malignant forms produce the dangerous remittents, quotidians and tertians of warm climates. They appear in the peripheral circulation chiefly (and sometimes only) as the small spi- or intra-corpuscular non-pigmented form, and are frequently ring-shaped. The rosette or sporulating bodies, and the pigmented, intra-corpuscular bodies of the malignant type are very rarely obtained from finger-blood. These stages of this type are passed in certain viscera, such as the spleen, brain, etc., and the organisms can be obtained by aspirating blood from the spleen at the beginning of a febrile rigor. The special virulence of this type seems to depend on its habit of accumulating in the viscera quite as much as on the pyrogenetic toxine which it is supposed to liberate. A principal and characteristic feature of the malignant parasite is the crescent-shaped body, a form which is usually present in the finger-blood when the infection is of some standing, and especially when cachexia is marked.

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